



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,917	12/14/2004	Hubert Cecile Martens	NL020573US	8862
24737	7590	08/18/2010	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS			HEYI, HENOK G	
P.O. BOX 3001			ART UNIT	PAPER NUMBER
BRIARCLIFF MANOR, NY 10510			2627	
		MAIL DATE	DELIVERY MODE	
		08/18/2010	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/517,917

Filing Date: December 14, 2004

Appellant(s): MARTENS ET AL.

---

Dicran Halajian  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 05/26/2010 appealing from the Office action mailed 03/26/2010.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

1, 4-10 and 12.

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN"

REJECTIONS.” New grounds of rejection (if any) are provided under the subheading “NEW GROUNDS OF REJECTION.”

**(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant’s brief.

**(8) Evidence Relied Upon**

Nishiuchi et al. 5,764,619 (Nishiuchi hereinafter) in view of Usami US 2002/0006105 (Usami hereinafter)

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

*Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiuchi et al. 5,764,619 (Nishiuchi hereinafter) in view of Usami US 2002/0006105 (Usami hereinafter).

Regarding claim 1, Nishiuchi teaches a multi-stack optical data storage medium (recording medium according to this embodiment has two information layers, col 13 line 52) for recording and reading using a focused radiation beam entering through an entrance face of the

Art Unit: 2627

medium during recording and reading (recording and reproducing, col 13 line 60), comprising: a first substrate having, on a side thereof: a first recording stack L0, comprising a recordable type L0 recording layer comprising a dye (organic coloring matter, a leuco dye, such as triphenylmethane or the like may be employed, col 14 lines 64-66), and formed in a first L0 guide groove, and a first reflective layer present between the L0 recording layer and the first substrate (guide grooves formed on a first substrate formed a first information layer formed by a thin film, col 11 line 7+), a second substrate having, on a side thereof: a second recording stack L1 comprising a recordable type L1 recording layer, said second recording stack being at a position closer to the entrance face than the L0 recording stack and formed in a second L1 guide groove (guide grooves formed on a second substrate formed a second information layer formed by a thin film, col 11 line 18+); and a transparent spacer layer sandwiched between the first and second recording stacks (there is formed a transparent separation layer between the first information layer and the second information layer, col 11 line 24+), said transparent spacer layer having a thickness substantially larger than the depth of focus of the focused radiation beam (the thickness of the separation layer be set to a value larger than twice the focal depth, col 16 line 6-12) wherein the first L0 guide groove has a depth  $G_{L0}$  in the range  $25\text{nm} < G_{L0} < 40\text{nm}$  and the first reflective layer comprises a metal and has a thickness  $> 50\text{ nm}$  (a metal formed into a thin reflective film having thickness of 40nm to 200nm, col 14 line 34) but Nishiuchi fails to teach that the first L0 guide groove has a depth in the claimed range.

However, Usami teaches the depth of the pre-groove is preferably from 20 to 100nm (see para [0009]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the recording layer of Nishiuchi to include a dye material while

keeping the depth of the groove between 25 and 40nm. The modification would have been obvious because of the benefit of excellent recording sensitivity and controlling recording properties like jitter, as taught by Usami (see para [0008]). Further, discovery of an optimum value for a known process, in this case, optimization of ranges, is obvious engineering. Please see In re Aller, 105 USPQ 233 (CCPA 1955).

Regarding claim 4, Nishiuchi teaches the multi-stack optical data storage medium as claimed in claim 1, wherein the recordable type L0 recording layer has a thickness between 70nm and 150nm measured on the land portion of the guide groove (Having a thickness of 90nm).

Regarding claim 5, Nishiuchi teaches the multi-stack optical data storage medium as claimed in claim 1, wherein said multi-stack optical data storage medium further comprises a dielectric layer present at a side of the L0 recording layer opposite from the side where the first reflective layer is present (the double layer structure may be a structure including a dielectric material layer/a recording layer, a structure including a recording layer/a reflecting layer or a structure including a reflecting layer/a recording layer in the forgoing sequential order, col 15 line 18-24).

Regarding claim 6, Nishiuchi teaches the multi-stack optical data storage medium as claimed in claim 5, wherein the dielectric layer has a thickness in the range of 5nm – 120nm (a dielectric layer having a thickness of 30nm, col 46 line17).

Regarding claim 7, Nishiuchi teaches the multi-stack optical data storage medium as claimed in claim 1, wherein said multi-stack optical data storage medium further comprises a

second reflective layer comprising a metal is present at a side of the L0 recording layer opposite from the side where the first reflective layer present (a structure including a first reflecting layer/a dielectric material layer/a recording layer/a dielectric material layer/a reflecting layer when viewed from the substrate, col 15 line 32-35).

Regarding claim 8, Nishiuchi teaches the multi-stack optical data storage medium as claimed in claim 7, wherein the second reflective layer has a thickness in the range of 5nm - 15nm (a semitransparent reflecting layer having a thickness of 14nm, col 46 line33).

Regarding claim 9, Nishiuchi teaches the multi-stack optical data storage medium as claimed in claim 7, wherein the second reflective layer mainly comprises a metal selected from the group of Ag, Au, Cu, Al (the thin film reflective layer is made of a material selected from a group consisting of metal, such as Au, Al, Cu or their alloys, col 13 line 62-67).

Regarding claim 10, Nishiuchi teaches the multi-stack optical data storage medium as claimed in claim 1, wherein the effective reflection level of the stacks is at least 0.18 at a radiation beam wavelength of approximately 655 nm (reflectance of the information layer at a wavelength of 680nm is 17%, col 45 line 22 also look at col 18 line 1-8).

Regarding claim 12, Nishiuchi and Usami disclose a multi-stack optical data storage medium comprising all the limitations of claim 1 as discussed above, but fail to explicitly disclose a modulation M of 75% and a reflection level of 70% being obtained. However, the claim recitations would have been obvious to one skilled in the art through routine experimentation and no unexpected result would be obtained.

### **(10) Response to Argument**

Appellant argues that Nishiuchi, Usami, and combination thereof, do not disclose or suggest the present invention as recited in independent claim 1: wherein the first L<sub>0</sub> guide groove has a depth G<sub>L0</sub> in the range 25nm < G<sub>L0</sub> < 40nm, and the first reflective layer comprises a metal and has a thickness > 50nm, and wherein the first L<sub>0</sub> guide groove has a full half maximum width W<sub>L0</sub> < 350nm. As was pointed out in previous office actions, Nishiuchi teaches a pit width of 300nm which is similar to what applicant is claiming and the secondary reference Usami teaches groove depth in the claimed range. Applicant continues to argue that the pit of Nishiuchi having a width of 300nm and a depth of 90nm is likely to not have enough reflection. Examiner would like to point out that “not likely” doesn’t equate “not obvious.” Since the medium of the current application and the medium from Nishiuchi reference are made of same structural material as shown in rejection of claims 1 and 9, it’s only obvious for the two mediums to have similar reflectivity amount. Additionally, reflectivity amount is not claimed in claim 1 therefore appellant's reflectivity related argument is moot.

### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Henok G Heyi/  
Examiner, Art Unit 2627

Art Unit: 2627

/Joseph H. Feild/  
Supervisory Patent Examiner, Art Unit 2627

Conferees:

/J. H. F./  
Joseph H. Feild  
Supervisory Patent Examiner, Art Unit 2627

/wy/  
Wayne Young  
Supervisory Patent Examiner, Art Unit 2627